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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,115	03/26/2001	Shuichi Watanabe	04202.0137	6251

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EXAMINER

BETTENDORF, JUSTIN P

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 07/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,115

Applicant(s)

WATANABE ET AL.

Examiner

Justin P. Bettendorf

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 & 6. 6) ☐ Other:

DETAILED ACTION

Claim Objections

Claim 11 is objected to because of the following informalities: Claim 11 should include a recitation such as --said ceramic sheets is made of a magnetic ceramic to form the magnetic body-- or some other language to avoid any confusion. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 5 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification needs to disclose how the same conductor plate as recited in claim 5 integrally forms the terminal electrodes and at least one of the input/output terminals. Such a recitation yields all of the terminals electrodes being electrically connected, which would make the device unusable (i.e., all of the terminals would be short circuited together). With respect to claim 8, the feature corresponding to the recitation "means for positioning said laminate module" needs to be disclosed because it is not clear from the disclosure (including the drawings) what element(s) performs the recited function. Without this explicit information, one skilled in the art would be required to perform undue experimentation or speculate in order to make and use the claimed invention.
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3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites "said ground electrode" and "said terminal electrodes", both of which lack an antecedent basis. Claim 9 recites "said electrode patterns", which lacks an antecedent basis.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 13, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawada JP 09-055607 (cited by the applicant).

The Kawada reference discloses in figure 1 a non-reciprocal circuit device (i.e. circulator) that is for use in a cell-phone (which inherently includes transmit, receive, and antenna circuits) {see attached English translation para. [0001]} comprising: central conductors 52A-52C bent around the magnetic body ferrite 56 with insulation films therebetween [0017]; permanent magnet 82; yoke-forming metallic cases 84, 72 [0023]; a flat laminate module 60 with integrated matching capacitors having patterns 62A-62C [0019]; and a resin composite base 74 comprising

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the conductor plate 72 integrated therewith and terminal electrodes 74A-74E [0021] connected with side connections 66A-66E [0020].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada in view of Watanabe et al. JP 04-172702.

The Kawada reference discloses the claimed non-reciprocal circuit including a laminate module with integrated capacitors but does not disclose multiple electrode patterns connected by via electrodes (assuming that this is what is the meaning of the recitation in claim 9) nor a ground pattern on the lower surface of the laminate module 60.

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Nevertheless, the Watanabe et al. reference discloses in figure 7 a multilayer substrate (i.e. laminate) capacitor with electrode patterns connected by via connections (e.g. 851, 852, etc) and a ground layer 81 substantially covering the entire lower surface (fig. 6) for a non-reciprocal device that advantageously allows a large capacitance without a large increase in size of the device (see the abstract).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the art-recognized equivalent multilayer, laminate capacitor of Watanabe et al. in place of the laminate capacitor in the non-reciprocal device of Kawada because such a substitution of art-recognized equivalent laminate capacitors would have advantageously allowed for larger sized capacitors without increasing the overall size of the device thereby suggesting the obvious modification.

10. Claims 4-8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada in view of Yamamoto et al. United States Patent No. 5,900,789.

The Kawada reference teaches a non-reciprocal device with a resin composite base and integrated conductor "plates" 72, 72A but does not disclose the electric resistance of the "plates" (e.g., $5.5 \times 10^{-8} \Omega$ as recited in claims 4 and 16).

The Yamamoto et al. reference discloses that it is advantageous to coat the yoke (i.e. casing) with a metal having a resistivity $5.5 \mu\Omega$ or less to decrease signal loss (see abstract).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have added a coating having a low resistance to the yoke (i.e. casing) in the non-

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reciprocal device of Kawada as taught by Yamamoto because such a modification would have advantageously reduced signal loss.

With respect to claim 5, it is assumed that terminals 74A-74E meet the intended claim language and that the upturned walls 72 meet the intended claim language of claim 8. It should be noted that process steps such as "integrally molded" are given patentable insofar as these process steps affect the final structure. In the application of the rejection with respect to claim 4, "integrally molded" is given no weight because the resin composite 74 is attached to the plates 72 thereby yielding an integral structure.

11. Claims 10, 11, 12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada in view of Marusawa et al. United States Patent No. 5,774,024.

The Kawada reference discloses a non-reciprocal device but does not disclose a laminate magnetic body with the central conductors located therein.

The Marusawa et al. reference discloses a non-reciprocal device in figure 12 central electrodes 55-57 (formed of multiple conductors connected by via connections - see also figure 4) that includes magnetic ceramic material to form a non-reciprocal device that allows for fewer parts and miniaturization (col. 8, lines 8-15, col. 3, lines 42-52, and col. 9, lines 12-24).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the magnetic body/central conductors of Yamamoto et al. in place of the magnetic body/central conductors in the non-reciprocal device of Kawada because such a substitution of art-recognized equivalent magnetic body/central conductors would have

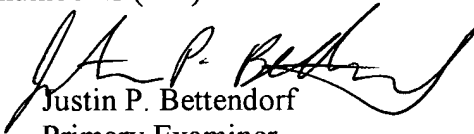
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advantageously allowed for few parts and miniaturization thereby suggesting the obviousness of the modification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P. Bettendorf whose telephone number is (703) 308-2780. The examiner can normally be reached on 6:00-3:30 (M-F, 1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Justin P. Bettendorf
Primary Examiner
Art Unit 2817

jpb
July 17, 2002